

1
RoHS Compliant

2

3

4

5

6

7

8

A

B

C

D

E

F

G

H

A

B

C

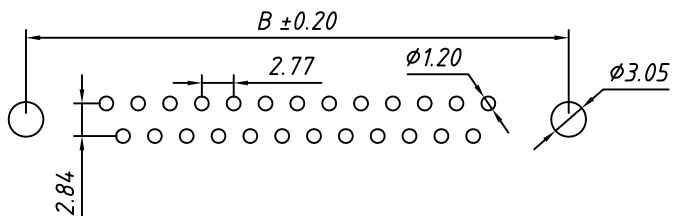
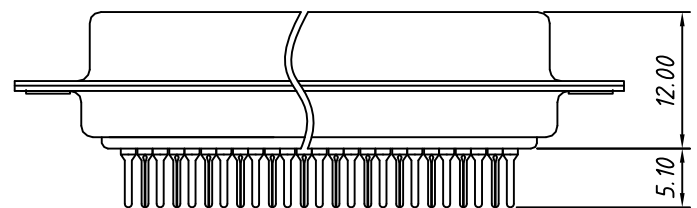
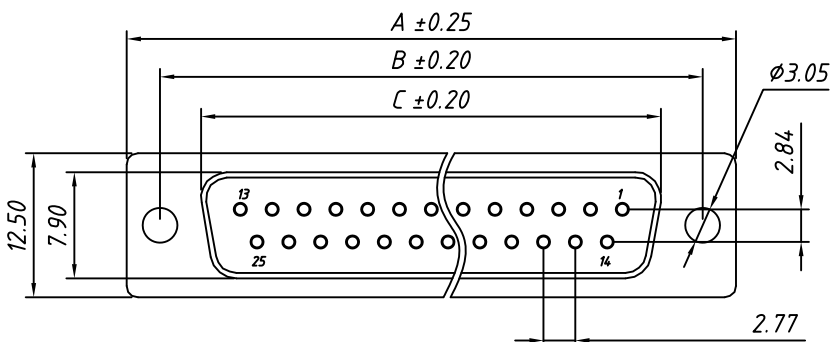
D

E

F

G

H



RECOMMENDED PCB LAYOUT
TOLERANCE:±0.05mm

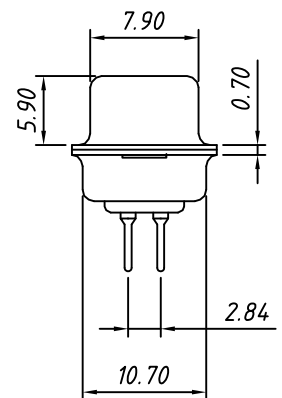
Number of Contacts	DIMENSION		
	A±0.25	B±0.20	C±0.20
09	30.81	24.99	16.33
15	39.14	33.32	24.66
25	53.04	47.04	38.38
37	69.32	63.50	54.84

GENERAL TOLERANCE	PROJECTION		Description:
X. ±0.30	UNITS	mm	D-SUB Connector,Panel Mount,Through Hole, Female
.X ±0.25	SCALE	1:1	
.XX ±0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221-XX-F-X
ANGLE TOLERANCE	Check by:	Daniel	
X. ±3°	Date	2018-03-01	NingBo KLS ELECTRONIC CO.,L TD.
.X ±2°	SHEET	1 OF 1	
.XX ±1°			

Material:
Housing: PBT+30% Glass filled ,UL94V-0
Contacts: Brass ,Gold Plating or
Gold Plating on Contact Arer,
Tin on Solder Tail.
Shell: Steel, Nickel Plating

Electrical Characteristics:
Current Rating: 5 AMP
Insulator Resistance: 1000MΩ Min. at DC 500V
Withstanding Voltage: 500V AC (rms) for 1 minute
Contact Resistance: 20mΩ Max. Initial
Operating Temperature: -40°C ~+105°C

Call waiting force		
Contacts	Insertion	Withdraw
09M/09F	≤4.0kgf	≥1.8kgf
15M/15F	≤4.5kgf	≥2.0kgf
25M/25F	≤6.0kgf	≥2.5kgf
37M/37F	≤8.0kgf	≥3.5kgf



Order Information

L - KLS1 - 221 - XX - F - X

RoHS

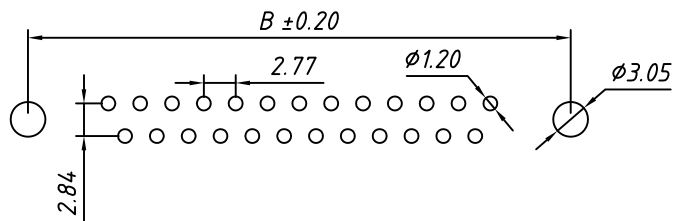
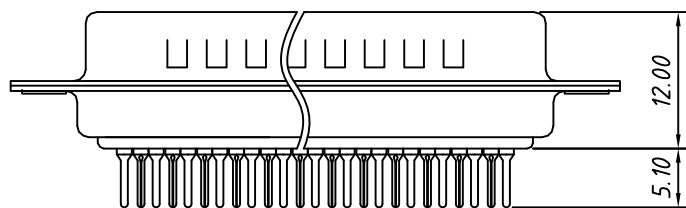
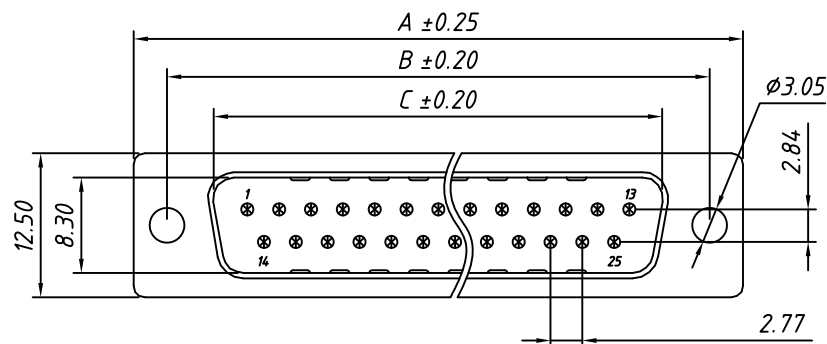
D-SUB Connector, 2 Row Through Hole

Number of Contacts

Connector type: F-Female

Housing Color: B-Black L-Blue W-White

1
RoHS Compliant



F
RECOMMENDED PCB LAYOUT
TOLERANCE: $\pm 0.05\text{mm}$

G

Number of Contacts	DIMENSION		
	$A \pm 0.25$	$B \pm 0.20$	$C \pm 0.20$
09	30.81	24.99	16.92
15	39.14	33.32	25.25
25	53.04	47.04	38.96
37	69.32	63.50	55.42

H

Material:

Housing: PBT+30% Glass filled ,UL 94V-0

Contacts: Brass ,Gold Plating or

Gold Plating on Contact Arer,

Tin on Solder Tail.

Shell: Steel, Nickel Plating

Electrical Characteristics:

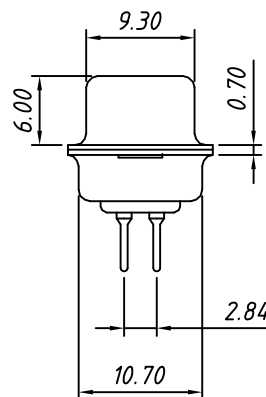
Current Rating: 5 AMP

Insulator Resistance: 1000M Ω Min. at DC 500V

Withstanding Voltage: 500V AC (rms) for 1 minute

Contact Resistance: 20m Ω Max. Initial

Operating Temperature: -40 $^{\circ}\text{C}$ ~ +105 $^{\circ}\text{C}$



Call waiting force

Contacts	Insertion	Withdraw
09M/09F	$\leq 4.0\text{kgf}$	$\geq 1.8\text{kgf}$
15M/15F	$\leq 4.5\text{kgf}$	$\geq 2.0\text{kgf}$
25M/25F	$\leq 6.0\text{kgf}$	$\geq 2.5\text{kgf}$
37M/37F	$\leq 8.0\text{kgf}$	$\geq 3.5\text{kgf}$

Order Information

L - KLS1 - 221 - XX - M - X

RoHS

D-SUB Connector,
2 Row Through Hole

Number of Contacts

Connector type: M-Male

Housing Color:

B-Black L-Blue W-White

GENERAL TOLERANCE	PROJECTION		Description:
X. ± 0.30	UNITS	mm	D-SUB Connector, Panel Mount, Through Hole, Male
.X ± 0.25	SCALE	1:1	
.XX ± 0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221-XX-M-X
ANGLE TOLERANCE	Check by:	Daniel	
X. $\pm 3^{\circ}$	Date	2018-03-01	NingBo KLS ELECTRONIC CO.,L TD.
.X $\pm 2^{\circ}$	SHEET	1 OF 1	
.XX $\pm 1^{\circ}$			

RoHS Compliant

Material:

Housing: PBT+30% Glass filled ,UL94V-0

Contacts: Brass ,Gold Plating or

Gold Plating on Contact Arer,

Tin on Solder Tail.

Shell: Steel, Nickel Plating

Electrical Characteristics:

Current Rating: 5 AMP

Insulator Resistance: 1000M Ω Min. at DC 500V

Withstanding Voltage: 500V AC (rms) for 1 minute

Contact Resistance: 20m Ω Max. Initial

Operating Temperature: -40 $^{\circ}$ C ~ +105 $^{\circ}$ C

Order Information

L - KLS1 - 221 - 50- F - X

RoHS

D-SUB Connector,
Through Hole

Number of Contacts

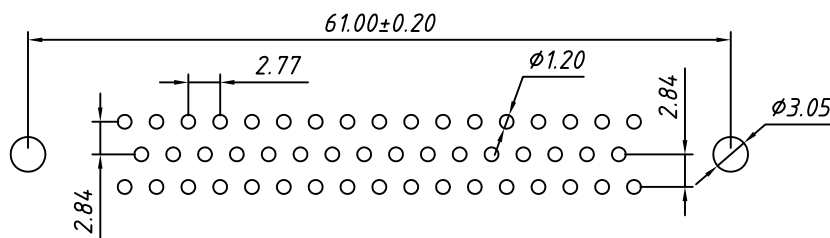
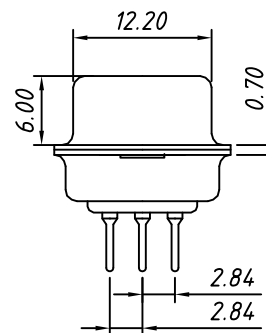
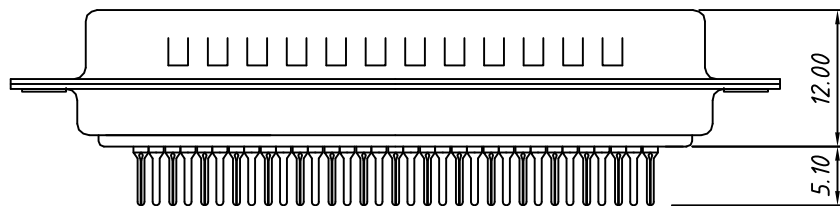
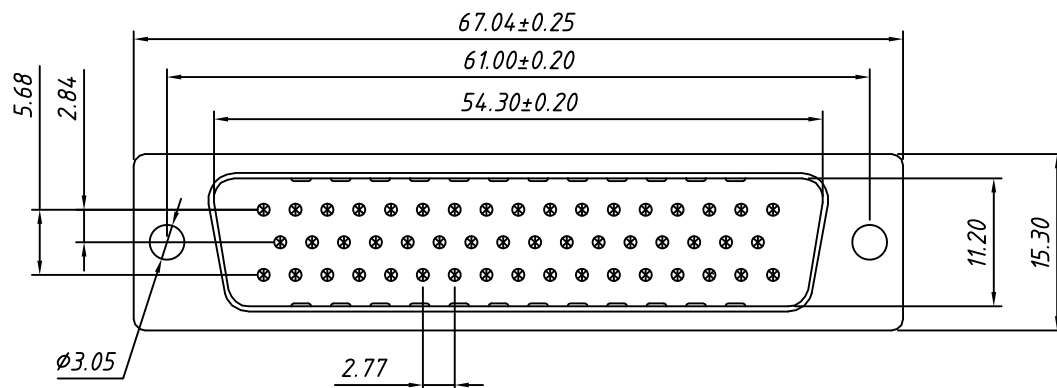
Connector type: F-Female

Housing Color:

B-Black L-Blue W-White

GENERAL TOLERANCE	PROJECTION		Description:
X. ± 0.30	UNITS	mm	D-SUB Connector, Panel Mount, Through Hole, Female
.X ± 0.25	SCALE	1:1	
.XX ± 0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221-50-F-X
ANGLE TOLERANCE	Check by:	Daniel	
X. $\pm 3^{\circ}$	Date	2018-03-01	 NingBo KLS ELECTRONIC CO.,L TD.
.X $\pm 2^{\circ}$	SHEET	1 OF 1	
.XX $\pm 1^{\circ}$			

1 RoHS Compliant



RECOMMENDED PCB LAYOUT
TOLERANCE:±0.05mm

Material:
Housing: PBT+30% Glass filled ,UL94V-0
Contacts: Brass ,Gold Plating or
Gold Plating on Contact Arer,
Tin on Solder Tail.
Shell: Steel, Nickel Plating

Electrical Characteristics:
Current Rating: 5 AMP
Insulator Resistance: 1000MΩ Min. at DC 500V
Withstanding Voltage: 500V AC (rms) for 1 minute
Contact Resistance: 20mΩ Max. Initial
Operating Temperature: -40°C ~+105°C

Order Information

L - KLS1 - 221 - 50- M - X
RoHS
D-SUB Connector,
Through Hole
Number of Contacts
Connector type: M-Male
Housing Color:
B-Black L-Blue W-White

GENERAL TOLERANCE	PROJECTION		Description:
X. ±0.30	UNITS	mm	D-SUB Connector,Panel
.X ±0.25	SCALE	1:1	Mount,Through Hole, Male
.XX ±0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221-50-M-X
ANGLE TOLERANCE	Check by:	Daniel	NingBo KLS ELECTRONIC CO.,L TD.
X. ±3°	Date	2018-03-01	
.X ±2°	SHEET	1 OF 1	
.XX ±1°			